



SEQUENCE LISTING

RECEIVED  
JAN 15 2002  
TECH CENTER 1600/2900

<110> Croce, Carlo  
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 Pro Gly His Val Leu Val Cys Pro Leu Arg Pro Val Glu Arg Phe His  
 35 40 45  
 Asp Leu Arg Pro Asp Glu Val Ala Asp Leu Phe Gln Thr Thr Gln Arg  
 50 55 60  
 Val Gly Thr Val Val Glu Lys His Phe His Gly Thr Ser Leu Thr Phe

65                      70                      75                      80  
 Ser Xaa Gln Asp Gly Pro Glu Ala Gly Gln Thr Val Lys His Val His  
                                  85                      90                      95  
 Val His Val Leu Pro Arg Lys Ala Gly Asp Phe His Arg Asn Asp Ser  
                                  100                      105                      110  
 Ile Tyr Glu Glu Leu Gln Lys His Asp Lys Glu Asp Phe Pro Ala Ser  
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 Trp Arg Ser Glu Glu Glu Glu Ala Ala Glu Ala Ala Leu Arg Val  
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 Tyr Phe Gln  
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 <213> murine

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                                  20                                 25                                 30  
 Pro Gly His Val Leu Val Cys Pro Leu Arg Pro Val Glu Arg Phe Arg  
                                  35                                 40                                 45  
 Asp Leu His Pro Asp Glu Val Ala Asp Leu Phe Gln Val Thr Gln Arg  
                                  50                                 55                                 60  
 Val Gly Thr Val Val Glu Lys His Phe Gln Gly Thr Ser Ile Thr Phe  
   65                                 70                                 75                                 80  
 Ser Met Gln Asp Gly Pro Glu Ala Gly Gln Thr Val Lys His Val His  
                                  85                                 90                                 95  
 Val His Val Leu Pro Arg Lys Ala Gly Asp Phe Pro Arg Asn Asp Asn  
                                  100                                 105                                 110  
 Ile Tyr Asp Glu Leu Gln Lys His Asp Arg Glu Glu Glu Asp Ser Pro  
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 Arg Val Tyr Phe Gln Ala  
 145                                 150

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                                  20                                 25                                 30  
 Arg Pro Arg Ala Met Ala Ile Ser Ser Ser Ser Cys Glu Leu Pro Leu  
                                  35                                 40                                 45  
 Val Ala Val Cys Gln Val Thr Ser Thr Pro Asp Lys Gln Gln Asn Phe  
                                  50                                 55                                 60

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Leu	Ala	Phe	Leu	Pro	Glu	Ala	Phe	Asp	Phe	Ile	Ala	Arg	Asp	Pro	Ala
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Glu	Thr	Leu	His	Leu	Ser	Glu	Pro	Leu	Gly	Gly	Lys	Leu	Leu	Glu	Glu
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Tyr	Thr	Gln	Leu	Ala	Arg	Glu	Cys	Gly	Leu	Trp	Leu	Ser	Leu	Gly	Gly
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Phe	His	Glu	Arg	Gly	Gln	Asp	Trp	Glu	Gln	Thr	Gln	Lys	Ile	Tyr	Asn
	130					135					140				
Cys	His	Val	Leu	Leu	Asn	Ser	Lys	Gly	Ala	Val	Val	Ala	Thr	Tyr	Arg
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Lys	Thr	His	Leu	Cys	Asp	Val	Glu	Ile	Pro	Gly	Gln	Gly	Pro	Met	Cys
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Glu	Ser	Asn	Ser	Thr	Met	Pro	Gly	Pro	Ser	Leu	Glu	Ser	Pro	Val	Ser
			180					185					190		
Thr	Pro	Ala	Gly	Lys	Ile	Gly	Leu	Ala	Val	Cys	Tyr	Asp	Met	Arg	Phe
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Pro	Glu	Leu	Ser	Leu	Ala	Leu	Ala	Gln	Ala	Gly	Ala	Glu	Ile	Leu	Thr
	210					215					220				
Tyr	Pro	Ser	Ala	Phe	Gly	Ser	Ile	Thr	Gly	Pro	Ala	His	Trp	Glu	Val
225					230					235					240
Leu	Leu	Arg	Ala	Arg	Ala	Ile	Glu	Thr	Gln	Cys	Tyr	Val	Val	Ala	Ala
				245					250					255	
Ala	Gln	Cys	Gly	Arg	His	His	Glu	Lys	Arg	Ala	Ser	Tyr	Gly	His	Ser
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Met	Val	Val	Asp	Pro	Trp	Gly	Thr	Val	Val	Ala	Arg	Cys	Ser	Glu	Gly
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Pro	Gly	Leu	Cys	Leu	Ala	Arg	Ile	Asp	Leu	Asn	Tyr	Leu	Arg	Gln	Leu
	290					295					300				
Arg	Arg	His	Leu	Pro	Val	Phe	Gln	His	Arg	Arg	Pro	Asp	Leu	Tyr	Gly
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Asn	Leu	Gly	His	Pro	Leu	Ser									
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 <213> murine

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 Thr Met Ser Ser Ser Thr Ser Trp Glu Leu Pro Leu Val Ala Val Cys  
 35 40 45  
 Gln Val Thr Ser Thr Pro Asn Lys Gln Glu Asn Phe Lys Thr Cys Ala  
 50 55 60  
 Glu Leu Val Gln Glu Ala Ala Arg Leu Gly Ala Cys Leu Ala Phe Leu  
 65 70 75 80  
 Pro Glu Ala Phe Asp Phe Ile Ala Arg Asn Pro Ala Glu Thr Leu Leu  
 85 90 95  
 Leu Ser Glu Pro Leu Asn Gly Asp Leu Leu Gly Gln Tyr Ser Gln Leu

Ala	Arg	Glu	100	Cys	Gly	Ile	Trp	Leu	105	Ser	Leu	Gly	Gly	Phe	110	His	Glu	Arg
			115						120						125			
Gly	Gln	Asp	Trp	Glu	Gln	Asn	Gln	Lys	Ile	Tyr	Asn	Cys	His	Val	Leu			
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Leu	Asn	Ser	Lys	Gly	Ser	Val	Val	Ala	Ser	Tyr	Arg	Lys	Thr	His	Leu			
			145												160			
Cys	Asp	Val	Glu	Ile	Pro	Gly	Gln	Gly	Pro	Met	Arg	Glu	Ser	Asn	Tyr			
				165						170					175			
Thr	Lys	Pro	Gly	Gly	Thr	Leu	Glu	Pro	Pro	Val	Lys	Thr	Pro	Ala	Gly			
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Lys	Val	Gly	Leu	Ala	Ile	Cys	Tyr	Asp	Met	Arg	Phe	Pro	Glu	Leu	Ser			
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Leu	Lys	Leu	Ala	Gln	Ala	Gly	Ala	Glu	Ile	Leu	Thr	Tyr	Pro	Ser	Ala			
			210							215					220			
Phe	Gly	Ser	Val	Thr	Gly	Pro	Ala	His	Trp	Glu	Val	Leu	Leu	Arg	Ala			
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Arg	Ala	Ile	Glu	Ser	Gln	Cys	Tyr	Val	Ile	Ala	Ala	Ala	Gln	Cys	Gly			
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Arg	His	His	Glu	Thr	Arg	Ala	Ser	Tyr	Gly	His	Ser	Met	Val	Val	Asp			
			260							265					270			
Pro	Trp	Gly	Thr	Val	Val	Ala	Arg	Cys	Ser	Glu	Gly	Pro	Gly	Leu	Cys			
			275							280					285			
Leu	Ala	Arg	Ile	Asp	Leu	His	Phe	Leu	Gln	Gln	Met	Arg	Gln	His	Leu			
			290							295					300			
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 <212> PRT  
 <213> Drosophila melanogaster

<400> 23

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Ala	Thr	Ile	Ala	Val	Gly	Gln	Met	Arg	Ser	Thr	Ser	Asp	Lys	Ala	Ala			
			35						40					45				
Asn	Leu	Ser	Gln	Val	Ile	Glu	Leu	Val	Asp	Arg	Ala	Lys	Ser	Gln	Asn			
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Arg	Thr	Gln	Thr	Ile	Glu	Leu	Ser	Glu	Gly	Leu	Asp	Gly	Glu	Leu	Met			
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Ala	Gln	Tyr	Arg	Glu	Leu	Ala	Lys	Cys	Asn	Lys	Ile	Trp	Ile	Ser	Leu			
			100						105					110				
Gly	Gly	Val	His	Glu	Arg	Asn	Asp	Gln	Lys	Ile	Phe	Asn	Ala	His	Val			
			115						120					125				
Leu	Leu	Asn	Glu	Lys	Gly	Glu	Leu	Ala	Ala	Val	Tyr	Arg	Lys	Leu	His			
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Val	Thr	Pro	Gly	Tyr	Cys	Leu	Glu	Arg	Pro	Val	Ser	Thr	Pro	Val	Gly
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Gln	Ile	Gly	Leu	Gln	Ile	Cys	Tyr	Asp	Leu	Arg	Phe	Ala	Glu	Pro	Ala
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Val	Leu	Leu	Arg	Lys	Leu	Gly	Ala	Asn	Leu	Leu	Thr	Tyr	Pro	Ser	Ala
		195					200					205			
Phe	Thr	Tyr	Ala	Thr	Gly	Lys	Ala	His	Trp	Glu	Ile	Leu	Leu	Arg	Ala
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Arg	Ala	Ile	Glu	Thr	Gln	Cys	Phe	Val	Val	Ala	Ala	Ala	Gln	Ile	Gly
225					230					235					240
Trp	His	Asn	Gln	Lys	Arg	Gln	Ser	Trp	Gly	His	Ser	Met	Ile	Val	Ser
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Pro	Trp	Gly	Asn	Val	Leu	Ala	Asp	Cys	Ser	Glu	Gln	Glu	Leu	Asp	Ile
			260					265					270		
Gly	Thr	Ala	Glu	Val	Asp	Leu	Ser	Val	Leu	Gln	Ser	Leu	Tyr	Gln	Thr
		275					280					285			
Met	Pro	Cys	Phe	Glu	His	Arg	Arg	Asn	Asp	Ile	Tyr	Ala	Leu	Thr	Ala
	290					295					300				
Tyr	Asn	Leu	Arg	Ser	Lys	Glu	Pro	Thr	Gln	Asp	Arg	Pro	Phe	Ala	Thr
305					310					315					320
Asn	Ile	Val	Asp	Lys	Arg	Thr	Ile	Phe	Tyr	Glu	Ser	Glu	His	Cys	Phe
			325						330					335	
Ala	Phe	Thr	Asn	Leu	Arg	Cys	Val	Val	Lys	Gly	His	Val	Leu	Val	Ser
			340					345					350		
Thr	Lys	Arg	Val	Thr	Pro	Arg	Leu	Cys	Gly	Leu	Asp	Cys	Ala	Glu	Met
		355					360					365			
Ala	Asp	Met	Phe	Thr	Thr	Val	Cys	Leu	Val	Gln	Arg	Leu	Leu	Glu	Lys
	370					375					380				
Ile	Tyr	Gln	Thr	Thr	Ser	Ala	Thr	Val	Thr	Val	Gln	Asp	Gly	Ala	Gln
385					390					395					400
Ala	Gly	Gln	Thr	Val	Pro	His	Val	His	Phe	His	Ile	Met	Pro	Arg	Arg
			405						410					415	
Leu	Gly	Asp	Phe	Gly	His	Asn	Asp	Gln	Ile	Tyr	Val	Lys	Leu	Asp	Glu
			420					425					430		
Arg	Ala	Glu	Glu	Lys	Pro	Pro	Arg	Thr	Ile	Glu	Glu	Arg	Ile	Glu	Glu
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 <213> C. elegans

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 Gln Ala Ala Lys Asn Met Ile Glu Arg Ala Gly Glu Lys Lys Cys Glu  
 35 40 45  
 Met Val Phe Leu Pro Glu Cys Phe Asp Phe Ile Gly Leu Asn Lys Asn



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Glu Gln Ile Asp Leu Ala Met Ala Thr Asp Cys Glu Tyr Met Glu Lys		
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Tyr Arg Glu Leu Ala Arg Lys His Asn Ile Trp Leu Ser Leu Gly Gly		80
	85	90
Leu His His Lys Asp Pro Ser Asp Ala Ala His Pro Trp Asn Thr His		95
	100	105
Leu Ile Ile Asp Ser Asp Gly Val Thr Arg Ala Glu Tyr Asn Lys Leu		110
	115	120
His Leu Phe Asp Leu Glu Ile Pro Gly Lys Val Arg Leu Met Glu Ser		125
	130	135
Glu Phe Ser Lys Ala Gly Thr Glu Met Ile Pro Pro Val Asp Thr Pro		140
145	150	155
Ile Gly Arg Leu Gly Leu Ser Ile Cys Tyr Asp Val Arg Phe Pro Glu		160
	165	170
Leu Ser Leu Trp Asn Arg Lys Arg Gly Ala Gln Leu Leu Ser Phe Pro		175
	180	185
Ser Ala Phe Thr Leu Asn Thr Gly Leu Ala His Trp Glu Thr Leu Leu		190
	195	200
Arg Ala Arg Ala Ile Glu Asn Gln Cys Tyr Val Val Ala Ala Ala Gln		205
	210	215
Thr Gly Ala His Asn Pro Lys Arg Gln Ser Tyr Gly His Ser Met Val		220
225	230	235
Val Asp Pro Trp Gly Ala Val Val Ala Gln Cys Ser Glu Arg Val Asp		240
	245	250
Met Cys Phe Ala Glu Ile Asp Leu Ser Tyr Val Asp Thr Leu Arg Glu		255
	260	265
Met Gln Pro Val Phe Ser His Arg Arg Ser Asp Leu Tyr Thr Leu His		270
	275	280
Ile Asn Glu Lys Ser Ser Glu Thr Gly Gly Leu Lys Phe Ala Arg Phe		285
	290	295
Asn Ile Pro Ala Asp His Ile Phe Tyr Ser Thr Pro His Ser Phe Val		300
305	310	315
Phe Val Asn Leu Lys Pro Val Thr Asp Gly His Val Leu Val Ser Pro		320
	325	330
Lys Arg Val Val Pro Arg Leu Thr Asp Leu Thr Asp Ala Glu Thr Ala		335
	340	345
Asp Leu Phe Ile Val Ala Lys Lys Val Gln Ala Met Leu Glu Lys His		350
	355	360
His Asn Val Thr Ser Thr Thr Ile Cys Val Gln Asp Gly Lys Asp Ala		365
	370	375
Gly Gln Thr Val Pro His Val His Ile His Ile Leu Pro Arg Arg Ala		380
385	390	395
Gly Asp Phe Gly Asp Asn Glu Ile Tyr Gln Lys Leu Ala Ser His Asp		400
	405	410
Lys Glu Pro Glu Arg Lys Pro Arg Ser Asn Glu Gln Met Ala Glu Glu		415
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Ala Val Val Tyr Arg Asn Leu Met		430
	435	440

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 melanogaster and C. elegans Nit1

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 35 40 45  
 Ser Leu Leu Cys Pro Gly Leu Arg Ile Pro Gln Leu Ser Val Leu Cys  
 50 55 60  
 Ala Gln Pro Arg Pro Arg Ala Met Ala Ile Ser Ser Ser Ser Cys Glu  
 65 70 75 80  
 Leu Pro Leu Val Ala Val Cys Gln Val Thr Ser Thr Pro Asp Lys Gln  
 85 90 95  
 Gln Asn Phe Lys Thr Cys Ala Glu Leu Val Arg Glu Ala Ala Arg Leu  
 100 105 110  
 Gly Ala Cys Leu Ala Phe Leu Pro Glu Ala Phe Asp Phe Ile Ala Arg  
 115 120 125  
 Asp Pro Ala Glu Thr Leu His Leu Ser Glu Pro Leu Gly Gly Lys Leu

130	135	140
Leu Glu Glu Tyr Thr Gln	Leu Ala Arg Glu Cys Gly	Leu Trp Leu Ser
145	150	155
Leu Gly Gly Phe His Glu	Arg Gly Gln Asp Trp Glu	Gln Thr Gln Lys
165	170	175
Ile Tyr Asn Cys His Val	Leu Leu Asn Ser Lys Gly	Ala Val Val Ala
180	185	190
Thr Tyr Arg Lys Thr His	Leu Cys Asp Val Glu Ile	Pro Gly Gln Gly
195	200	205
Pro Met Cys Glu Ser Asn	Ser Thr Met Pro Gly	Pro Ser Leu Glu Ser
210	215	220
Pro Val Ser Thr Pro Ala	Gly Lys Ile Gly Leu	Ala Val Cys Tyr Asp
225	230	235
Met Arg Phe Pro Glu	Leu Ser Leu Ala Leu	Ala Gln Ala Gly
245	250	255
Ile Leu Thr Tyr Pro	Ser Ala Phe Gly Ser	Ile Thr Gly Pro
260	265	270
Trp Glu Val Leu Leu	Arg Ala Arg Ala Ile	Glu Thr Gln Cys
275	280	285
Val Ala Ala Ala Gln	Cys Gly Arg His His	Glu Lys Arg Ala
290	295	300
Gly His Ser Met Val	Val Asp Pro Trp Gly	Thr Val Val Ala
305	310	315
Ser Glu Gly Pro Gly	Leu Cys Leu Ala Arg	Ile Asp Leu Asn
325	330	335
Arg Gln Leu Arg Arg	His Leu Pro Val Phe	Gln His Arg Arg
340	345	350
Leu Tyr Gly Asn Leu	Gly His Pro Leu Ser	Xaa Asp Leu Thr
355	360	365
Ser Leu Asp Leu Pro	Leu Pro Pro Pro Cys	His Tyr Glu Leu
370	375	380
Leu Met Xaa Leu Gly	Gly Arg Ile Gln Ala	Gln Leu Pro Ser
385	390	395
Glu Pro Xaa Leu Ser	Xaa Trp Asn Thr Asp	Gly Leu Leu Gly
405	410	415
Thr Phe Thr Xaa Ala	Ser Pro Glu Val Arg	Leu Gln Phe Gln
420	425	430
Gly Ile Leu Tyr Ser	His Cys Leu Phe His	Gly Asn Xaa Ser
435	440	445
Glu Gly Xaa Ala Ala	Leu Ala Leu Lys	Asn Ile Ile Ile
450	455	460
Lys Lys Lys Lys Lys	Lys Lys	
465	470	